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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,967	02/10/2006	Tomoo Sugawara	46700121PUS1	2068

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EXAMINER
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TESKIN, FRED M

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/567,967

Applicant(s)

SUGAWARA ET AL.

Examiner

Fred M. Teskin

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1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20060210; 20060331</u> . | 6) <input type="checkbox"/> Other: ____  |

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The preliminary amendment of February 10, 2006 having been entered, claims 9-19 are currently pending and under examination herein.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 9, 11, 13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 7025851 to Caster et al ("Caster").

Caster discloses a method of bonding a first substrate to a second substrate by providing a catalyst at the first substrate surface, providing a metathesizable liquid monomer mixture of crosslinking metathesizable monomer and non-crosslinking metathesizable monomer, and contacting the catalyst on the first substrate surface with the metathesizable mixture to effect the metathesis reaction and bond the first substrate to the second substrate (col. 2, lines 20+). The contacting step produces, as a coating on the first and second substrates, a crosslinkable resin composition comprising a ring-opening metathesis polymerization catalyst and monomer(s) capable of undergoing a metathesis reaction (see col. 4, lines 3-6 and 16-18 and col. 5, lines 28-30); and the substrates may be fibrous in form (e.g., fabric or fiber per col. 2, lines 63+ and col. 3, lines 66-67).

Caster differs from the claimed invention only in the use of a polymerizable composition wherein the cycloolefin monomer lacks, as a substituent group, a monovalent group including an aliphatic carbon-carbon unsaturated bond and wherein a radical generating agent (e.g. a peroxide) is absent.

Thus, in various working examples (see, e.g., Example 37 and Table 22) Caster employs the metathesis catalyst of Grubbs (described in col. 54, lines 30+) and mixtures of crosslinking monomers as set out in Table 22. In at least two examples, mixtures of ethylidene norbornene (ENB) and norbornadiene are used at a 2:3 mass (weight) ratio (see Table 22, penultimate entry in cols. 55-56 and final entry at the top of col. 57).

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Based on the stated ratio and the molecular weight of the monomers, the mixture appears to contain ENB in an amount within applicants' claim 9, i.e., ca. 34 mol %; however, ethylidene is not a monovalent substituent group and none of the exemplified mixtures contain a radical generating agent.

However, Caster generically teaches the use of norbornene monomers represented by formulae wherein each  $R^1$  substituent is defined to include alkenyl such as *vinyl* or allyl and mentions ENB and 5-vinyl-norbornene in a list of exemplary substituted norbornene monomers (see col. 5, line 55 to col. 6, line 60). Given this teaching, there would have been a reasonable expectation of vinyl-substituted norbornene monomers performing equivalently to ENB in the monomer mixtures of Caster. Such expectation is further supported by the close structural similarity between ENB and a positional isomer like 5-vinyl-norbornene; i.e., compounds so closely related in structure would be expected to possess similar properties, including similar reactivity as metathesizable monomers in the Caster method.

Accordingly, the inclusion of a vinyl-substituted norbornene such as 5-vinyl-norbornene in the monomer mixture of Caster would have been obvious to one having ordinary skill in the art at the time of applicant's invention. It would further have been obvious to one so skilled to include a radical generating agent in the monomer mixture of Caster given the express teaching therein of the benefits of including an optional heat-reactive peroxide compound in the metathesizable material; e.g., ability to effect crosslinking of the propagating polymer under mild conditions (see col. 15, line 33 to col. 16, line 40).

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Based on the teachings of Caster as detailed above, the subject matter of claims 9, 11, 13, and 15-19 is held to have been *prima facie* obvious to one having ordinary skill in the art at the time of applicant's invention.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 9-19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 10/567,782 in view of Caster et al.

The conflicting claims differ in that applicants' claims call for the presence of 0.1 to 50 % by mole of a cycloolefin having, as a substituent group, a monovalent group including an aliphatic carbon-carbon unsaturated bond, and this compound is not recited in the copending application claims.

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Nevertheless, it would have been obvious to one of ordinary skill in the art to modify the polymerizable composition as claimed in the '782 application by inclusion of the requisite amount of defined cycloolefin, since Caster et al teach compositionally similar monomer mixtures containing such an amount of ENB as well as the general equivalency of ENB and 5-vinyl-norbornene as substituted norbornene monomers (see col. 6, lines 50-60). Vinyl-substituted norbornenes are species of cycloolefin within applicants' claim 9. Given the close structural similarity of ENB and 5-vinyl-norbornene (as positional isomers), one of ordinary skill would have been inclined to include an equivalent amount of the latter in the polymerizable composition claimed in the '782 application, in the expectation of obtaining similar reactivity as metathesizable monomer in that composition.

This is a provisional obviousness-type double patenting rejection.

The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Woodson et al and Grubbs et al are cited as pertinent to metathesis-polymerizable compositions containing DCPD cyclic olefin and peroxide as post-cure crosslinker of the polycycloolefin.

No claims are allowable at this time.


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Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/09-28-06

  
FRED TESKIN  
PRIMARY EXAMINER  
